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NICARAGUA SHIP-CANAL.

REPORT

OF THE

EXECUTIVE COMMITTEE

TO

THE MEMBERS

OF THE

PROVISIONAL SOCIETY.

WASHINGTON, D. C.
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New York, *Oct.* 15, 1880.

To the Members of the
Provisional Interoceanic Canal Society:

Gentlemen: The Executive Committee think this a proper time to report the present condition of the interests with which they are charged, and, in the same connection, to present views respecting the future of our Canal enterprise, what measures for the organization of the final company present themselves, and the policy that now appears advisable; and also to briefly review the interests which the people of this country have in the enterprise, and the degree of control it is thought the Government should acquire over it.

It is appropriate to enter upon such subjects at some length, because measures are now necessary for incorporation and organization.

CONCESSION AND SURVEYS.

On the 22d of May last, the Nicaraguan Congress, called in special session, confirmed in favor of our Society the concession which Mr. A. G. Menocal, civil engineer, U. S. Navy, had negotiated with the Executive of that State.

A copy of this concession will now be forwarded to each member of the Society, and it will be seen that it embraces everything necessary to the complete and successful construction of a ship-canal across that country. The fullest latitude and powers are given, and the land grants, extending along the line of the Canal, will become very valuable possessions.

While awaiting the assembling of Congress and its action upon the concession, Mr. Menocal, under orders of the Secretary of the U. S. Navy, conducted a resurvey of part of the so-called Rio Lajas route, between Lake Nicaragua and the Pacific Ocean, in order to ascertain whether the headwaters of Rio Grande could not be diverted so as to admit of the construction of the Canal for a short distance in the narrow valley of that stream and in the vicinity of the divide between the lake and ocean, the summit at the highest point there being but forty-one feet above high water in the lake. From that point the land slopes on either side to the level of the Canal in a distance of about three miles.

This route had been abandoned in the original survey because of the floods of the Rio Grande in the rainy season, its bed being dry at other times. Mr. Menocal ascertained that the stream could be turned by a short dam 39.67 feet in height above the river's bottom, and a cut 3.88 miles in length carrying its waters to a tributary of the Rio Lajas, and thus into the lake. The estimated cost of this work and of diverting the mouth of the Rio Lajas is $1,689,913.

The reduction in the depth of cut gained in consequence of this change is 93 feet, and the estimated cost of the Canal is decreased about $7,000,000.

A further reduction in cost and other advantages are secured by maintaining water in the lake at the high-water mark shown in the floods of 1878, it being about two feet higher than the one before fixed upon, and substituting one dam in the San Juan river in lieu of four, as projected by the United States survey. This dam Mr. Menocal found could be admirably located above the mouth of the San Carlos, thus obviating the need to turn that stream, as before projected, and doing away with three lateral canals and locks around the several dams. The dam will be 49 feet above low-water level, and is estimated to cost, if done in masonry, $1,543,526; that is to say, it is assumed to cost as much as was before estimated for the four dams.

It may be well to recall the fact that above the San Carlos no drainage of moment reaches the San Juan river, and in consequence its variations in flow are measured by the gradual fluctuations in water-level of the lake itself, of which it is the outlet. The floods of the San Carlos, it is estimated, will back up behind the dam even to 25 feet in height.

Great saving in cost and important advantages are gained from the change to a higher level in the lake, reducing, as it does, the dredging and rock-cutting in the river and lake, and widening the river channel. These measures give an uninterrupted navigation for a distance of 130 miles at the summit or lake level, of which 120 miles will be in a wide and free channel, or open lake, where steamers can proceed at full speed.

By connecting a line of examination with surveys formerly made by him, Mr. Menocal ascertained that the valley of the San Juan river could be abandoned above the mouth of the little tributary called the San Francisco, and a straight course be run thence to Greytown, shortening the line of canalization from that before proposed in following the the San Juan valley to a lower point by about six miles, and reducing the cost of that section some $2,000.000. The total length of actual canal, ocean to ocean, under this change, becomes 53.17 miles, and the whole distance across 173.57 miles, the navigation being wholly in fresh water. The length of the Panama canal as projected is 45.3 miles, and the navigation in sea water. The advantage of fresh water in the former, over the salt water in the latter, will be appreciated by all navigators.

Besides these improvements upon the former location of the canal line, found to be entirely feasible, Mr. Menocal further determined that the topography of the locality admits of sinking the canal cuts and adopting higher lifts in the locks, thus reducing the number of locks, and doing away almost wholly with embankments which it had been thought. might prove sources of weakness. The drainage of the north declivity of the San Juan river is avoided, the disposition of which had before offered some difficulties.

It will thus be seen that Mr. Menocal's resurveys and examinations—details of which, with maps, etc., will be published by the Navy Department—in connection with other surveys made by him since the date of those heretofore published by the United States, have resulted in relocations and changes otherwise, some of which were supposed to be practicable at the time of the first surveys, that reduce the estimated cost of the canal construction from $52,577,718 to $41,193,839. Where no changes occur, the original estimates are retained, and the basis for estimates of work in the new locations are the same as before used. Thus no reductions arise from changes in the assumed cost for work or material. That the rates are reliable may be credited, since a well-known New York firm offers to contract, giving all required security, to perform the dredging and rock excavations under water (the most uncertain items on which to estimate) for the amount fixed in the estimates.

These relocations, as were the original locations made by the United States survey, are lines ascertained to be absolutely practicable, and involving measured and determined amounts of work and material. It is highly probable that final locations for construction along the entire route may disclose other changes which can be made with advantage to the Canal itself and with large reductions in its cost. Hence it is believed that the present estimated cost is excessive. In other words, the volume of work which, at certain rates of cost, give that amount, will be subject to reduction.

For purposes connected with the organization of a construction company the surveys have now been carried to a sufficient degree of accuracy in location, for they exhibit what is known to be practicable, and represent a maximum of work involved. Any changes will be in the way of reductions. The committee wish to press this point upon your attention. The worst is known. What advantages may be gained are yet to be discovered in that precision in surveys required for a final location. It should also be remembered that the excavations are upon the surface, without difficulties of drainage, and where the obstacles to be overcome can be seen, measured, and estimated.

FINANCIAL.

So soon as a copy of the concession had been received and telegraphic notice had of its confirmation, this Committee sent one of its members to London and Paris to inform financial firms of the fact, and to give information as to its provisions and scope and the purposes and objects of this Society; also, to place before them evidence of the policy of our Government and the views existing in this country in respect to the building of a ship-canal across the American Isthmus—views which create a wide-spread feeling of opposition to any scheme for the construction of a Canal by an organization which would look for protection and support to an European power, or which might give occasion for such power to interfere with any of the States of the continent, or with their local authorities.

Satisfactory interviews were had with many of the leading financial men of the world, and it was found, with authorities of such character, little faith was shown in the success of the scheme of M. de Lesseps for the construction of the Panama Canal. The opinion seemed to be generally entertained that no canal project could be successful without the approval of our Government and its guarantee of protection.

While it appears unlikely that M. de Lesseps can succeed in obtaining money for his project, the influence he can and will exert to deter investors from engaging in another canal enterprise, so long as he is urging the Panama one in the hope of finding some way out of his difficulties and of securing subscriptions, must not be underrated. In this particular he is a powerful opponent; but it is generally conceded that subscriptions in this country of, say, $15,000,000 to the Nicaragua-Canal stock, and a guarantee of protection by the United States—which, indeed, is fully provided for in treaty stipulations with Nicaragua—would secure in Europe any amount necessary for the completion of the Canal. The Society was not then in condition to present definite propositions:

THE INTERESTS INVOLVED AND THE RELATIONS OF THE CANAL TO THE NATION AT LARGE.

It is not proposed to discuss at length the complicated interests that would be affected by a canal. They are many, and as wide-spread as the abodes of men on earth, involving material changes in the course of trade, especially that of the west coast of the two Americas. It would open direct and cheap transportation for many thousands of emigrants to the Pacific coasts; give rapid and cheap carriage for the products of extensive and fertile regions; cause a quickened development of our Pacific Empire, and would prevent combinations designed to maintain high freight and passenger charges.

It is possible a short-sighted policy might object to the opening of the Canal because of apprehended injury to particular interests; but no one who gives careful thought to the subject can doubt that the general good will be advanced, and that railway interests would be subserved by such a highway, rather than injured, as some suppose.

Opening a line of economical water transportation to markets beyond the seas for those bulky and cheap products that cannot bear extended railway carriage must rapidly develop agriculture—the basis of all solid prosperity—induce emigration, give rise to new industries and occupations, develop new resources, urge to activity in all walks in life, and create a business for railways far in excess of anything before enjoyed. The prosperity of our railway lines in their competition with an active river, lake, and canal traffic illustrates the possibilities of such competing means of transportation. The wonderful growth of wealth and population in the Mississippi Valley region, and consequent expansion of railway interests, is the result of that continued cheapening of carriage arising from improvements in land transportation and the competition by water; but transcontinental railways can hardly become economical in the sense that the great trunk lines are to that valley. They have made valuable for agricultural purposes those fertile plains of the Great West which otherwise had remained pasture lands, populated only by scattered herdsmen, and have reaped in return the active railway business we to-day witness.

An emigration of large proportion, induced by whatever cause, will give to the Pacific side that needed population, in the train of which will follow all the beneficial consequences to the carrying interests experienced on the Atlantic side, varied only by differences in the character of the country and in the consequent pursuits of men. The great railways reaching across the continent will then find it necessary to stretch out numerous arms and feeders, such as have given colossal proportions to the lines from the Atlantic coast to the interior.

To people and develop the Pacific States is of great national importance, and the general views entertained in this regard have been exhibited by the liberal aid extended by our Government to lines of communication.

The enterprising people of that coast are realizing now the need for facilities of carriage by more economical routes. One million tons of surplus wheat are there to be transported to the world's markets, and the means are not only inadequate, but the markets are reached by vessels passing around Cape Horn. The farmer is crippled in his efforts to compete with those more favored, and with depressing influences bearing upon that industry, follows depression in all others.

Considerations respecting rates of toll and other canal charges have special interest for the people of this country, not only because the Canal should afford economical transportation for our Pacific coast possessions, but also because it will be the water highway of an inter-State commerce between two great coast-lines extending for thousands of miles on both the Atlantic and Pacific Oceans. In this trade no other nation has, or can have, a direct interest. It is one to be conducted exclusively by American shipping. If we regard the near future, when many millions of industrious people will inhabit the Pacific States and the coast trade shall have grown to great proportions, we perceive the importance of canal dues in their bearing upon this exclusive national interest. It is a question differing entirely from that relating to exactions imposed upon our foreign commerce and borne in the same degree by the shipping of all nations.

While the concession secured from Nicaragua might give rise to needlessly large charges upon the Pacific carrying trade, it does not give nearly the opportunity for onerous exactions found in the grant to the promoters of the Panama Canal, in which a ship's measurement is to be determined by the product of the multiplication of its extreme length by its extreme breadth, and this sum by the draft of water, each measured in metres, and each cubic metre displacement so ascertained to be liable to a charge of 10 francs, and to towage, light, anchorage, and other dues in addition. In other words, a ship is to be measured as if it were a submerged box, and the result, in the case of steamers especially, would be at least 50 per cent. more than the actual displacement. It contemplates a charge that is much in excess of the weight of vessel and cargo combined, for a cubic metre of water weighs about one ton.

The degree of oppressive charge such a grant would give rise to can only be measured by the forbearance of the Canal Company and the ability of shipping to pay; while the great cost of the proposed sea-level Canal, even if it be practicable to construct it as projected, would make it necessary to impose the highest possible charges to pay any dividend whatever on the capital invested. In this respect the Nicaragua project presents marked advantages, as it does in its greater proximity to our possessions.

Its comparative small cost will enable the Company to earn paying dividends upon rates of toll that would be ruinous to the Panama enterprise. This will appear more fully from the following statement of cost of the former, made up from M. de Lessep's report, as published by him in New York on his return from the Isthmus. The figures are prepared in exactly the same manner as the estimates of cost for the Nicaragua Canal given further on in this paper.

It should be remarked that a contingent allowance of 25 per cent. in engineer's estimates for a sea-level canal, to be constructed under the extreme difficulties to be met with at Panama, is very much smaller in proportion than for a surface canal. Also, that the valley of the Chagres, and the mountain pass where M. de Lesseps locates his canal, are well known, so that no reduction in the volume of excavation can be hoped for.

M. de Lesseps' estimated cost of excavation and other engineering work was 767,000,000 francs, say	$147,264,000
25 per cent. contingencies on same	36,816,000
Payment for purchase of concession	2,000,000
Condemnation of lands	1,000,000
Contingencies other than for construction work, in proportion to outlay much less than is allowed for the Nicaragua Canal	3,145,000
Commissions and expenses for placing $253,500.000 shares, 5 per cent	12,675,000
Interest for amounts called in on subscription during eight years' construction, 5 per cent	50,700,000
Amount to be paid Panama Railroad Co., for which no interest is computed	20,000,000
Founders' shares, as per provision of the concession, 10 per cent. of total shares—no interest included	30,400,000
Total cost	$304,000,000

Should part of the expenses be met by raising money upon bond and mortgage, at least 5 per cent. interest must be paid, leaving the showing even worse for shareholders than that above given.

A transit business amounting to 3,000,000 tons, at $2.50 per ton for all charges, would net, after deducting $1,500,000 for expenses and $375,000 to be paid the Colombian Government, only one and one-half per cent. on the cost; 6,000,000 tons at the same charge would net four per cent. on cost; while the same tonnage for the Nicaragua Canal *would net ten per cent. with a charge of only* $1.50 *per ton.*

The distance between the Atlantic and Pacific States by the Nicaragua route is about 500 miles less than by way of Panama.

This saving in distance, and the still greater advantage over the Panama route of those favoring winds for the approach to either Canal entrance by sailing-vessels, when superadded to the much smaller Canal charges necessary to its financial success, offer to the American people substantial and positive reasons for an active and effective support of the Nicaragua project. Engineering questions that have arisen as to the possibility of constructing the Panama Canal, as projected, even at an outlay of several hundred millions of dollars, are left out of view in considerations such as these here presented, in which the aim is to show that our national interests, and more especially those of the Pacific coast, and of our coast trade, require that the canal should be located upon the nearest practicable route, combining small cost in construction with accessibility to all kinds of commercial craft found upon the ocean.

It is perhaps needless to remark that a highway for our coast trade should be under the shadow, in some form, of our national power.

From considerations such as the foregoing, it is thought that, as a measure of public importance, the Government should, if practicable, acquire the right to impose conditions looking to limitations of tolls and charges in the Canal to the smallest amount consistent with reasonable returns upon the capital invested. It should be remembered that this power of limitation would extend throughout the entire 200 *years embraced in our Canal concession.* Who can estimate the magnitude of our inter-State commerce, to pass through it 25, 50, 100 years hence, and the importance of low rates of Canal charges?

BUSINESS AND COST OF THE CANAL.

What has been stated leads to considerations as to the net earnings on the cost of the Canal likely to be realized at the beginning of the enterprise.

The tonnage to pass through it has been variously estimated by the Paris Canal Congress, the San Francisco Board of Trade, M. de Lesseps, the Chief of the Bureau of Statistics of the United States Treasury Department, and by others; these estimates varying in amount from 1,625,000 tons to 6,000,000 tons annually, the *mean* of all being over 4,000,000 tons. The smaller amount is that fixed upon by the Treasury officer, whose tables are as valuable as his conclusions are erroneous. The figures before him did not tell of subsidies paid by rival interests to maintain high rates for freight and passengers by steamer; nor of a Central American trade (paying better than the more remote one of California) that absorbs the carrying capacity of steamships to the Isthmus; these two combined circumstances effectually doing away with competition by steamships for the North Pacific trade and passenger carriage. They did not explain the history of the Southwest Pacific coast carrying-trade which was forced through the Straits of Magellan by the exactions of the Panama Railway Company, at a time when that concern held absolute control of a mine of wealth in its California business; nor did they explain how, to this day, a great steamship company in absolute control of the foreign and way trade of that southwest coast, omitting guano and nitrates, not desirable for the company's interests, is now able to conduct the trade *via* the Straits of Magellan.

The main line ships of that Company reach the Pacific from England *via* the Straits, and last from the La Plata river on the Atlantic side. They proceed up the west coast to Valparaiso and Callao, at which last point they are *three thousand miles from the Straits of Magellan*, while, *via* Panama, the entire distance to Liverpool is about *five thousand nine hundred miles.*

Numerous and active coasting steamers, themselves paying handsomely in their local business, collect and carry to the large steamers at Callao and Valparaiso, and take from them for distribution, the foreign business of the coast.

The cacao of Ecuador and the products of Colombia, grown, as it may be said, within sight of Panama, are thus carried 3,500 to 4,000 miles in a direction opposite from the port of destination.

The distance from Valparaiso to Liverpool, *via* the Straits, is 8,725 miles; *via* Nicaragua, 7,550 miles. From Callao, *via* the Straits, the distance is 10,162 miles, and *via* Nicaragua, 6,100 miles. Thus, a steamer leaving Valparaiso for Liverpool by way of the Canal would have less distance to make by about 1,200 miles, and throughout the entire route to the North Atlantic the run would be on a sea wonderfully propitious for steamship navigation, and the reverse of that *via* the Straits of Magellan. Leaving Callao for Liverpool by way of Nicaragua, the distance is 4,000 miles less than *via* the Straits. While proceeding to deliver or gather cargo, the ship from or to Nicaragua, bound to or leaving Valparaiso, would make no needless detour of thousands of miles, as happens to the one leaving the La Plata for the southwest coast.

This unnatural diversion of a carrying trade from what was its natural course, with proper railway charges and facilities at Panama, and which would become much more its rightful one on the opening of the Canal, would be simply impossible. The steamship lines now centring on this side of Panama would pass into the Pacific in quest of their legitimate connecting business, as well as would sea-rovers, thus soon ending the existing state of things by turning the business of all that coast from Valparaiso north to the Canal. This would be an inevitable result.

It is also quite certain that favoring conditions of temperature and navigation would attract a large and growing tea trade by way of the Canal, and effectually stop any carriage of it, to this country at least, *via* Suez. The development of the Central American States, under the impetus of the Canal, would also become an important factor in the increase of business to be expected, and this is another advantage this route has as compared with that by Panama. Nicaragua and the adjoining States have a soil of unsurpassed richness for all tropical products, and coffee cultivation has already become a very important industry.

Allowing for changes above indicated, and for the vast surplus cereal crops of the North Pacific coast, amounting this year, as reported by San Francisco commercial authorities, to about 1,000,000 tons of wheat alone, all of which practically would pass the Canal, Mr. Nimmo's statistics show a large and very gratifying result for the enterprise.

The tables found on pages 6, 8, and 9 of his report, which are here numbered, respectively, 1, 2, and 3, are as follows:

TABLE 1.

Number of vessels and amount of tonnage which might have passed through the proposed canal if it had been constructed.

[N. B.—This table is based upon statistics of the latest year for which the requisite data can be obtained.]

	No. of vessels.	Tons.
1. Average number of vessels and amount of tonnage entered at and cleared from either side of the Isthmus of Panama, annually, in trade with all nations,* (Appendix 2 and 3).........	338	533,000
2. Vessels entered at and cleared from Pacific ports of the United States in trade around Cape Horn with Atlantic ports of the United States, during the year ended June 30, 1879,† (Appendix 4)	75	120,662
3. Vessels entered at and cleared from Atlantic ports of the United States in trade with foreign countries west of Cape Horn, during the year ended June 30, 1879, (Appendix 5).........	273	247,567
4. Vessels entered at and cleared from Pacific ports of the United States in trade with foreign countries east of Cape Horn, during the year ended June 30 1879, (Appendix 6)	455	551,929
5. Vessels entered at and cleared from ports of the several countries of Europe in trade around Cape Horn with foreign countries other than the United States, during the latest year for which the data can be stated with respect to each country, (Appendix 7).........	1,644	1,462,897
6. Vessels entered at and cleared from ports of British Columbia in trade with countries of Europe, during the year ended June 30, 1879.........	33	22,331
Total.........	2,818	2,938,386

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* An estimate from the report of the United States Consul at Panama (Appendix 2) and from a statement compiled from British consular returns, (Appendix 3.)

† Compiled from special reports by collectors of customs.

TABLE 2,

Showing the tonnage engaged in guano and nitre carrying, via Cape Horn, a business conducted by sailing-vessels:

	Vessels.	*Tons.*
Westward passages, *via* Cape Horn	314	314,000
Eastward passages, *via* Cape Horn	496	496,000
Total	810	810,000

TABLE 3,

Showing the deductions Mr. Nimmo estimates should be made from the gross amount of trade which might have passed through a canal, as shown per table, page 6, *amounting to* 2,938,386 *tons:*

	Vessels.	*Tons.*
(*a*) Vessels employed in trade between Atlantic ports of the United States and Australia	79	53,685
(*b*) Vessels employed in trade between Atlantic ports of the United States and Chili	24	17,120
(*c*) Vessels employed in trade between Europe and Chili	372	368,193
(*d*) One-half the tonnage employed between Atlantic ports of the United States and China and Japan—(estimated)	52	64,604
(*e*) Vessels engaged in guano and nitrate of soda trade between Atlantic ports of the United States and ports of Europe, with the western coast of South America	810	810,000
Total	1,337	1,313,602

Deducting the above amount he arrives at 1,624,784 tons as representing the probable business of the Canal.

The first error to be corrected is an estimate based on registered and not actual tonnage capacity, which, with steamships, makes a large difference in favor of the Canal, for tolls deal with carrying capacity.

Item 1, Table 1, representing a trade mostly conducted by steamships, may be increased for tonnage by, say, 40 per cent., giving 746,200 tons for Canal charges.

Item 2 does not involve grain carrying, and, referring to what has already been said about the entire absence of freight competition *via* Panama, may be safely increased to 250,000 tons as a Canal traffic.

Item 3 is reduced, as per amount *b*, Table 3, leaving it 230,447 tons.

Item 5. It appears by Table 2 that 810,000 tons of shipping are engaged in carrying guano and nitre, of which 314,000, Mr. Nimmo estimates, finds its way around the Horn seeking these freights.

The distance from the guano and nitre fields *via* Nicaragua to New York is half, and to England two-thirds, of that *via* Cape Horn.

It is thought by reason of distance, favoring winds in home voyages, the influences of other traffic of that coast, and the boisterous character of the Cape seas, that at least half the shipping engaged in these two lines of freight carrying would pass the Canal, say 405,000 tons. Deducting, then, 810,000 tons from 1,462,897 tons leaves 662,897, representing other traffic, of which, as per Item *c*, Table 3, 368,193 tons are set down as the business of the ports of Chili with Europe. Of this amount at least one-half is a steamship trade, which, as has already been shown, would take the course of the Canal, or say 184,096 tons; add 40 per cent. for difference of tonnage, gives a total of 257,734 tons to pass the Canal.

Deducting from 662,897 the above 368,193 tons Chili trade, we have still remaining 294,704 tons. As one-half of all the Chili trade, supposed to be conducted in sailing vessels, has been set down as passing *via* Cape Horn, we may safely credit this last item to the Canal.

For Item 4 of Table 1, representing the grain trade, we must now substitute what actually exists to-day. There are 1,000,000 tons surplus grain seeking carriage from the Pacific States and Territories. It is a safe estimate that half the shipping carrying it would pass the Canal to the West, making an aggregate of 1,500,000 tons shipping to pass through it on account of this transportation.

Referring to Mr. Nimmo's table, and substituting the figures herein found, we obtain for a probable Canal trade for the year 1880:

Item 1	746,200	tons.
" 2	250,000	"
" 3	230,447	"
" 4	1,500,000	"
" 5	957,448	"
" 6	22,331	"
Total	3,706,426	tons.

This is a little less than the mean of estimates before referred to as being something over 4,000,000 tons. A charge for this amount of business of $1.50 per ton for Canal tolls, and of 50 cts. per ton for all other items of expense for the Canal transit, after deducting $1,500,000 for Canal maintenance, etc., would give almost 8 per cent. net on the capital, as will be shown further on.

The above takes no account of passenger traffic, which would become an immediate source of revenue upon a very moderate charge. The voyage between New York and San Francisco could be made *via* the Canal, by a steamer of fair speed, in fifteen or sixteen days, and might be made by such ships as form the lines across the Atlantic in less time, the route being exceptionably favorable for steamships. Between European ports and San Francisco the voyages would be nine to twelve days longer, or twenty-five to twenty-seven days. In the same manner, steamship voyages between this country or Europe and the ports of the west coast of South America would be made in much less time than is now required, and by a route far more desirable. Hence, all that travel would pass through the Canal.

The emigration to the Pacific slope during the past ten years is reported by the Bureau of Statistics to have reached only 14,500 annually. What number will it attain to when direct steamships can carry, without transfer, in greater comfort, far less exposure, and at a small fraction of the present cost? What revenue may we not set down for this business at $5 per passenger for the Canal transit?

It appears to this Committee that one of the most important advantages the nation at large is to reap from the Canal would be a vastly enlarged European emigration to the Pacific States; but the length of voyage and character of the coast trade would also become powerful influences in re-establishing our mercantile shipping interest.

Without crediting any amount for passenger business, and without an allowance for the growth of business and population of the Pacific States in the interval of Canal construction, we have above found a traffic, actually awaiting its opening, amounting to 3,706,426 tons, about most of which there is little room for dispute or doubt; but *the Committee* in the following showing, *prefers to adopt* 3,000,000 *tons as a basis of estimates*, while still omitting all passenger traffic and not making reference to the valuable land grants.

What-charge upon this amount of tonnage will secure financial success for the enterprise?

This question involves the cost of the Canal when opened, complete in all respects. While reviewing this part of the subject it is important to bear in mind the permanency of the investment, the concession being for 200 years, and the vast growth of business certain to be secured.

The cost of the Canal, upon an estimated capital of $75,000,000, may be stated thus:

Engineer's estimated cost	$41,193,839
Add for engineer's contingencies 25 per cent	10,298,460
Interest for amounts paid in as called for during construction, at 5 per cent	10,013,500
Commissions and costs for placing shares, 5 per cent	3,337,500
Nicaragua shares, 5 per cent. of capital	3,750,000
Land condemnations	1,000,000
Expense of surveys and organization of Company, etc., including Nicaragua's portion	4,500,000
For contingencies, not engineering	909,701
Total estimated cost	$75,000,000

It is estimated that $1,500,000 per year will pay all costs of maintenance and operating the Canal upon a basis of business much larger than that adopted herein.

A charge of $2.00 per ton for Canal tolls and of 50 cents for all other charges would give for a business of 3,000,000 tons gross receipts of $7,500,000, and, deducting $1,500,000 for expenses, $6,000,000 net gain, or 8 per cent. upon $75,000,000. A business of *only* 2,000,000 *tons* would, after deducting for expenses, net very nearly *five per cent.* on the capital invested.

While the estimated tonnage is probably too small, the estimated cost of the Canal, with $11,000,000 for contingencies, is probably too large, as has been already shown.

TOLLS AND CANAL CHARGES.

The tolls and charges of the Suez Canal average $2.70 per ton, while $2.50 has been assumed to be the maximum charges for the Nicaragua Canal. An enlightened policy, and a true regard for the best interests of the enterprise, would lead to the adoption of as low charges as are consistent with fair earnings. Whenever the business of the Canal reaches 6,000,000 tons a maximum of $1.50 per ton for toll and all other charges would give gross receipts of $9,000,000. Deducting $1,500,000 for expenses, leaves 10 per cent. net for capital invested, while the passenger tolls are left to meet contingencies.

It is thought, as already stated, that the United States should acquire sufficient control over the enterprise to impress upon it their policy in respect to this prospective highway of a great coasting trade, and to secure the public and private interests involved. How this is to be accomplished is a matter for thoughtful study by all concerned.

It will be seen from the foregoing statements and figures, the reliability of which cannot be questioned, that the prospects for a successful and paying enterprise are very promising, and this report has been prepared for your information and careful consideration.

The Society has a most valuable concession, one that should be availed of to advance, not only the individual interests of the promoters of the enterprise and of investors in it, but, as well, to further those of the nation.

An act of incorporation will be introduced as soon as Congress has assembled, and other preparations made for the final organization of the Company.

When surveys for final location are completed it will be advantageous for the Society to secure the services of engineers of eminence in this country and in England and France to make personal examination of the route and report thereon.

For the Committee:

S. L. PHELPS,
Chairman.